

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

This chapter of the EIS describes the Proposed Action, as well as the Project as proposed by the Applicant. NEPA requires that the environmental documents prepared for a proposed action discuss alternatives. Therefore this chapter also describes the two alternatives to the Proposed Action that were retained for detailed analysis, including a No Action alternative. The alternatives to the Proposed Action were primarily designed to address the potential for take of Covered Species and relate to the size of the solar complex in relation to adjacent Covered Species habitat. The alternatives do not address other aspects of the Project such as siting of individual solar panels. The Applicant has demonstrated that siting and design of the Project has incorporated avoidance and minimization of direct physical impacts to Covered Species (e.g., ground disturbance or habitat removal) to the maximum extent practicable, as described in the August 2013 Draft HCP (Appendix B)

The Solar Complex involves the construction and operation of photovoltaic (PV) power-generating facilities on 5,784.3 acres (the Permit Area), which at full build-out would produce up to 700 MW of electricity. The Permit Area is comprised of Solar Sites which encompass 3,798.3 acres and Conservation Sites which encompass 1,894.4 acres. Of the 3,798.3 acres of Solar Sites, 3,700.8 acres will be developed with PV facilities (Solar Development Footprint). The project includes all actions that are necessary to construct, operate and maintain, and decommission the solar generating facilities, as well as those necessary to manage habitat and conserve biological species.

The Draft HCP has been created to support the application for a section 10(a)(1)(B) Incidental Take Permit (ITP) for the construction and operation of a Solar Complex that may result in the take of federally-listed species under the ESA. Activities included in the Draft HCP are identified as Covered Activities and allow for: 1) Construction and operation activities within Solar Sites; 2) Management and maintenance activities within Movement Corridors; 3) Management activities within the areas designated for conservation (Conservation Sites) including monitoring and reporting actions; 4) Activities associated with implementation of the conservation program specified in the Draft HCP and 5) Decommissioning.

The Draft HCP covers all activities within the Covered Lands (defined below) for a period of 35 years that are related to the construction, operation and maintenance of the Solar Complex and its facilities, and implementation of the conservation program described in the Draft HCP.

Construction of solar facilities on all Solar Sites is anticipated to be completed over an 8 to 10-year period from the commencement of the initial development. However, unknown constraints could extend the development phase to a 10 to 15-year period.

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It should be noted that the project description for the Maricopa Sun Solar Complex project, which was analyzed in the Environmental Impact Report (EIR) prepared for the County of Kern (Kern County, 2010, SCH #2010031038) has been reduced in acreage. The project proponent for the Solar Complex has elected to reduce the amount of land within the project for which the Draft HCP has been prepared. The Permit Area described in the EIR totaled 6,046 acres, whereas the Permit Area in the Draft HCP and this EIS total 5,784.3 acres. The Project Proponent chose to reduce the size of the project in reaction to an increase in the required ratio of offsite compensatory conservation lands to solar sites. Although the overall acreage is reduced slightly, there was a significant reduction of the solar development area, and a significant increase in the amount of conservation lands that are now part of the Covered Lands. Originally, the conservation lands totaled only 640 acres (Site 17C) and the remaining 6,046 acres were solar. Now, 1,864 acres are conservation lands, and 3,798 acres are solar sites. The remaining acreage is for setbacks and movement corridors.

2.2 BACKGROUND

2.2.1 Covered Lands

The Draft HCP covers 5,784.3 acres in unincorporated Kern County, which is located at the southern end of California's Central Valley within the San Joaquin Valley. Kern County is surrounded by Kings and Tulare counties to the north, Inyo and San Bernardino counties to the east, Ventura and Los Angeles counties to the south, and Santa Barbara and San Luis Obispo counties to the west.

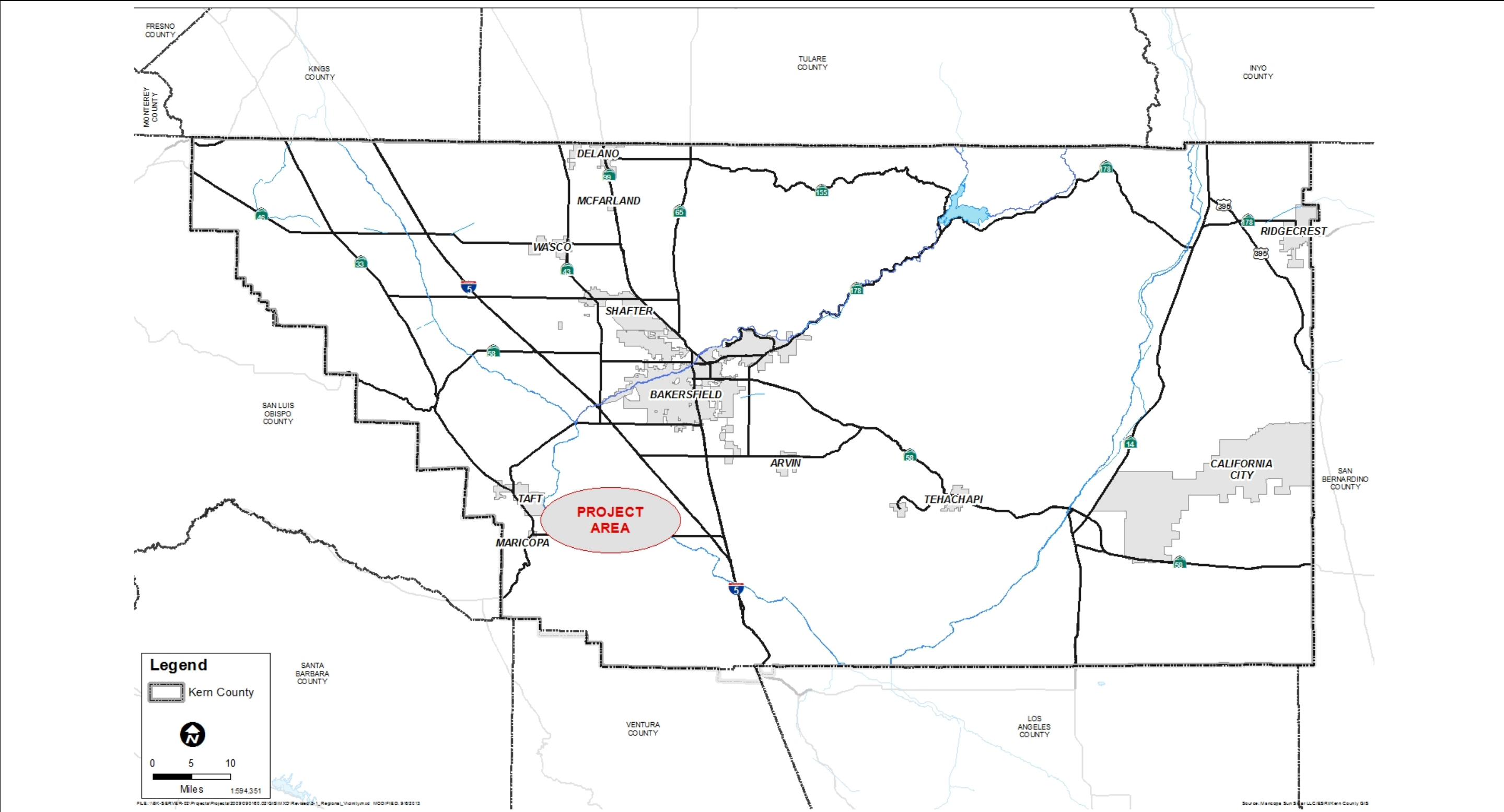
The County is divided into three regions consisting of the Valley Region, Mountain Region, and Desert Region. The Maricopa Sun Solar Complex is located in the Valley Region, which is characterized by relatively low rainfall and high average summer temperatures, and generally mild winters. The Valley region consists of four sub-areas, as follows: the Northern San Joaquin Valley, the Southern San Joaquin Valley, Westside, and Belridge. The Draft HCP applies to land located within the Westside sub-area, which is situated in the central west area of Kern County, bounded by the Belridge sub-area to the north, the San Luis Obispo County to the west, State Highway 166 to the south, and Interstate 5 to the east. The incorporated cities of Taft and Maricopa, and the unincorporated communities of South Taft, Ford City, Taft Heights and McKittrick are all located within the Westside sub-area. Figure 2-1 identifies the regional location of the Covered Lands that are addressed in this EIS.

The Draft HCP includes the following components, as described below: Permit Area, Solar Site Parcels, Solar Development Footprint, Movement Corridors, and Conservation Sites. Figure 2-2 describes the parcels that comprise the Covered Lands.

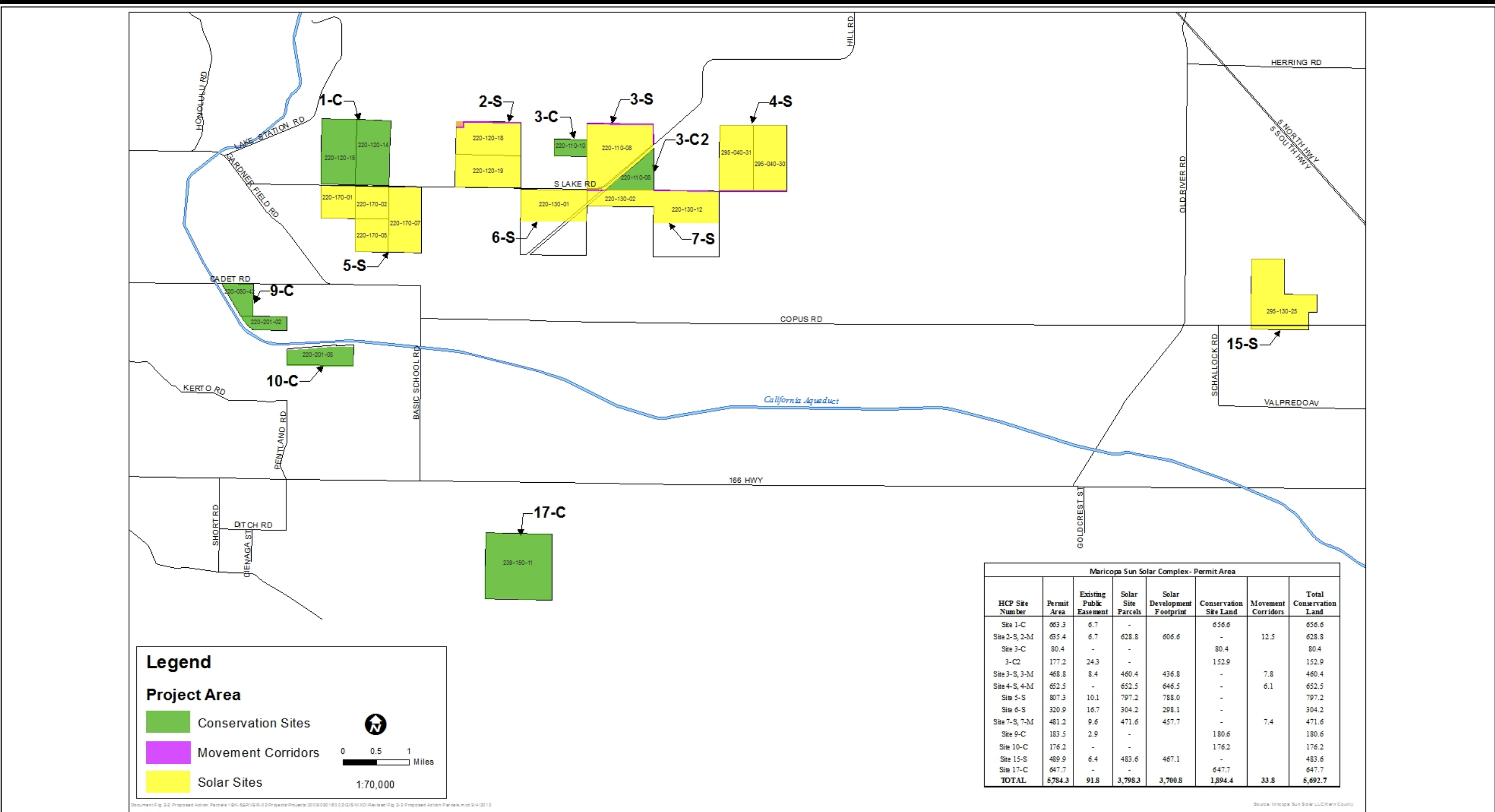
Permit Area

The Permit Area is the gross acreage of all parcels, which includes those parcels that will be developed into solar facilities and those that will be set aside as conservation areas. The Permit Area includes all existing public easements, movement corridors, setbacks, the Solar Development Footprint, and the Conservation Sites. The Permit Area totals 5,784.3 acres.

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Solar Site Parcels

The Solar Site Parcels are those portions of the Permit Area parcels that will be developed into solar facilities, but the acreage of existing public easements occurring on each parcel is subtracted from the gross acreage. The Solar Site Parcels encompass 3,798.3 acres. Upon completion of decommissioning, the Solar Site Parcels will be placed into permanent conservation easements concurrently with the acquisition of grading or building permit (whichever comes first) for each individual Solar Site and will be managed for the benefit of Covered Species in perpetuity as mitigation for the project's impacts to species once the Solar Site has been decommissioned.

Existing Public Easements

Existing Public Easements include lands within established public right-of-ways occurring along the project boundary. Existing Public Easements include public roadways, transmission line corridors, and a railroad line. Fifty-foot setbacks are established between all Existing Public Easements and the project boundary.

Solar Development Footprint

The Solar Development Footprint includes those portions of the Solar Site Parcels that will have solar facilities installed. The acreage of the Solar Development Footprint is equal to the Solar Site Parcels minus movement corridors and mandatory setbacks. The Solar Development Footprint totals 3,700.8 acres.

Movement Corridors

Movement Corridors are corridors of land identified to aid in the movement of species between areas of natural habitat across the landscape, which will be interspersed with developed parcels. Conservation easements on Movement Corridors will be included with the associated Solar Sites, but will be managed for Covered Species immediately upon establishing the conservation easement. These corridors are located along specified perimeters of the Solar Site Parcels and will be enhanced by installation of dens, perching posts, and changes in topographic relief to facilitate the movement of species and to provide connections between natural habitat patches. The acreage of the Movement Corridors totals 33.8 acres.

Conservation Sites

Conservation sites are parcels that were identified in special studies and during environmental review of the project as having value as habitat for Covered Species. Conservation easements will be recorded on these parcels to remove the potential for development. These parcels will remain in their native state or, if previously disked, will be enhanced to benefit species. These

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lands will be conserved and managed in perpetuity as mitigation for the project's impacts to species. Conservation sites total 1,894.4 acres.

Total Conservation Land

The total conservation land is the net acreage of the Solar Site Parcels plus the Conservation Site Land that will be permanently conserved as mitigation for the Project's impacts to biological species which will be placed into a conservation easement that will take effect once the solar facilities are decommissioned.

2.2.2 Existing Land Use

The Covered Lands are primarily comprised of currently undeveloped and vacant agricultural land, and are relatively flat. Surrounding land uses are both active and inactive agricultural land. Surrounding land use designations include intensive and extensive agriculture designations, lands designated as flood hazard areas, lands designated for public facilities, lands designated for the protection of important watershed recharge areas or wildlife habitat or having value as a buffer between resource areas and urban areas, and lands designated for industrial uses.

The Project site has been previously cultivated for agricultural production and is within the boundaries of Agricultural Preserve No. 12. The Project site was granted a certificate of cancellation of the Williamson Act land use contracts (Resolution No. 2011-078) by the Kern County Board of Supervisors on March 29, 2011 (County of Kern 2010).

2.2.3 Covered Species

The Draft HCP (Appendix B) proposes to include those species that are currently listed by the U.S. Fish and Wildlife Service (Service) or that might become listed (collectively, Covered Species) by the Service during the permit period, and that may be subject to "take" as defined by the FESA. Covered Species under the Draft HCP include the following: one reptile species, three mammal species, and one bird species that are identified in Table 2.2-1.

Table 2.2-1
Species Covered by the Maricopa Sun HCP and ITP

Common Name	Scientific Name	Federal Status ¹	State Status ¹	Other ¹
Covered Reptiles				
Blunt-nosed leopard lizard	<i>Gambelia sila</i>	FE	SE	SFP
Covered Mammals				
Tipton kangaroo rat	<i>Dipodomys nitratooides nitratooides</i>	FE	SE	-
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	FE	ST	-
Nelson's antelope squirrel	<i>Ammospermophilus nelsoni</i>	-	ST	-

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Common Name	Scientific Name	Federal Status ¹	State Status ¹	Other ¹
Covered Birds				
Burrowing owl	<i>Athene cunicularia</i>	-	CSC	MBTA

Source: Quad Knopf, 2011a.

¹ THE FOLLOWING ACRONYMS ARE DEFINED AS: FP = PROPOSED FOR FEDERAL LISTING, CSC = CALIFORNIA SPECIES OF CONCERN, SE = STATE ENDANGERED, ST = STATE THREATENED, SFP = STATE FULLY PROTECTED, MBTA = MIGRATORY BIRD TREATY ACT, AND BLMS = BUREAU OF LAND MANAGEMENT STATUS.

2.3 ALTERNATIVES

2.3.1 Introduction

The description of the proposed action in Section 2.3.3 is divided into two primary sections, as follows:

1. **PV Project.** A description of the activities associated with preconstruction, construction, operation and maintenance, and decommissioning of the PV facilities; and,
2. **HCP.** A description of elements of the Draft HCP (see Appendix B), including management and maintenance activities associated with movement corridors and conservation sites, including monitoring and reporting activities and activities associated with implementation of the conservation program described in the Draft HCP.

2.3.2 No Action Alternative

Under the No Action Alternative, the Service would not issue an ITP and the Project would not be developed. The No Action Alternative would avoid the potential take of the proposed Cover Species, but would also not provide a clean source of electricity, offset carbon emissions, or contribute to the Nation's renewable energy portfolio. The 5,784.3 acres identified as the Permit Area would likely remain agricultural, the 1894.4 acres identified as Conservation Sites would not be permanently conserved, and the proposed Conservation Management Plan would not be implemented. As a result, there would be no conservation benefit to Covered Species or other listed or sensitive species as a result of the Proposed Action. Agricultural activities, including grazing or disking, would likely continue resulting in reduced habitat quality as a result of vegetation removal and soil compaction.

2.3.3 Proposed HCP Alternative

The Proposed Action comprises the issuance of an ITP requested by the Applicant and implementation of the proposed Maricopa Solar HCP, including covered activities and conservation measures to avoid, minimize, or mitigate effects to the covered species. The Maricopa Sun Solar Complex is the first large scale PV solar project on private lands in the San

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Joaquin Valley. A number of environmental commitments have been incorporated into the covered activities to reduce the effects of the Project on the human environment.

The following description of covered activities is excerpted from Section 2.3.5 of the Draft HCP, dated August 2013. Refer to the Draft HCP (Appendix B) for additional information.

2.3.3.1 Covered Activities

Photovoltaic Project

The PV project is broadly defined as the construction and operation of PV power generating facilities (Solar Development Footprint) on 3,700.8 acres. Complete build-out of the Maricopa Sun Solar Complex will produce up to 700 MW of electricity¹.

The Draft HCP covers the following activities of the PV project, as further described herein: 1) Pre-construction, 2) Construction, 3) Operations and maintenance, and 4) Decommissioning activities within Solar Sites. A summary of covered activities is provided in Table 2.3-1.

Project Phasing

Construction of solar facilities on all Solar Sites is anticipated to be completed over an 8 to 10 year period from the commencement of the initial development. Unknown constraints, however, could extend the development phase to a 10 to 15 year period. It is anticipated that development of each Solar Site will take 12 to 18 months, depending on the acreage of the Solar Site, weather conditions, labor and equipment availability, and time of year. Additional details relative to project phasing can be found in Section 6.0 of the Draft HCP.

Pre-Construction Activities

CLEARING, GRUBBING, GRADING, AND LEVELING

Each Solar Site will be cleared or grubbed of vegetation to prepare for grading activities. Vegetation clearing and grubbing are anticipated to be minimal because of the lack of vegetation present on the sites, due to repeated disking operations. Minimal site grading is anticipated for most areas and will be dependent upon each specific site's topography. Soil will not be imported or exported from any site. The sites will not be laser leveled nor will vast amounts of soil be moved to accomplish leveling. During grading and compacting activities, water trucks will be operated to minimize airborne particles and dust. Clearing, grubbing, grading, and leveling will occur within all of the Solar Development Footprint and result in disturbance to 3,700.8 acres of land.

¹ The amount of energy from a 700 mw facility is calculated as follows: 700 mw x 8,766 hours/year x 30% capacity factor = 1.84 million MWh = 1,840 gigawatt hours = 1.84 terrawatt hours

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DELIVERY OF MATERIALS AND EQUIPMENT

Construction materials including concrete, pipe, fencing, wire and cable, fuels, reinforcing steel, building materials, and small tools and consumables will be delivered to the sites by truck. PV modules and other materials for the solar facilities will be manufactured off site, and will also be delivered by truck. Because the delivery of materials and equipment will occur to all Solar Development Footprints, this activity will result in disturbances to 3,700.8 acres of land.

Table 2.3-1
Occurrences of Covered Activities by Phase

Activity	Pre-construction	Construction	O&M*	Decommission
Clearing, grubbing, grading and leveling	X	X		X
Construction of O&M* buildings and meteorological stations		X		
Construction of overhead power lines, solar arrays		X		
Delivery of materials and equipment	X	X	X	
Demarcation of construction areas	X			
Drainage, erosion and dust control	X	X	X	X
Establishing and maintaining staging area(s)	X	X	X	
Fencing, installing gates, lighting, and construction of parking areas	X	X	X	
Geotechnical drilling and testing	X			
Grading and compacting	X	X		
Installation of overhead AC transmission lines		X		
Installation of signs	X	X		
Landscaping/site enhancement		X		
Managing waste (non-hazardous & hazardous)	X	X	X	X
Meter reading			X	
Monitoring alarms/security			X	
Operation of solar modules			X	
Paving of access road(s) and building areas		X	X	
Post construction soil treatment		X	X	
Removal of access roads				X
Reconductoring and installation of overhead AC transmission line system and substation expansion		X		
Removal of buildings, foundations, and concrete pads		X		X
Removal of electrical cabling				X
Removal of solar systems				X
Solar panel maintenance			X	
Surveying and staking	X			

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Activity	Pre-construction	Construction	O&M*	Decommission
Testing, plugging and abandoning wells	X			
Vegetation and weed management			X	
Habitat management, enhancement, and research**		X	X	X

* O&M = operations and maintenance

** Habitat management, enhancement, and research are independent of solar operations and are not discussed relative to phase.

DEMARCATON OF NON-CONSTRUCTION AREAS

Non-construction areas will be delineated by marking avoidance areas between the Solar Development Footprint which will be under construction and lands which will not undergo construction. These barriers will be established to keep construction activities confined to the Solar Development Footprint.

DRAINAGE, EROSION, AND DUST CONTROL

Prior to issuance of grading permits, the solar operator will submit a Stormwater Pollution Prevention Plan (SWPPP) to the Kern County Planning and Community Development Department that specifies what procedures will be utilized throughout the duration of the build-out of each parcel. The solar operator will prepare a drainage plan that is designed to minimize runoff and surface water pollution and will include engineering recommendations to minimize the potential for impeding or redirecting 100-year flood flows. Fugitive dust shall be managed using the delivery of water by spray trucks and the application of chemical dust.

ESTABLISHING AND MAINTAINING STAGING AREAS

During the pre-construction and/or construction phases of each solar development, paved staging areas will not exceed 5 acres total in size and will be erected inside of the permitted Solar Development Footprint, resulting in a total of 35 acres of staging areas dispersed over all solar sites. Each staging area will be enclosed with 8-foot tall perimeter security fencing (7-foot tall chain-link topped with 1 foot of barbed wire). This fencing will be permeable to wildlife to avoid entrapment in the event that staging area gates are left open during the day. Permeability of the fencing, particularly as pertains to San Joaquin kit fox, is described in Chapter 2.0 of the Draft HCP (Appendix B).

FENCING, INSTALLING GATES, AND CONSTRUCTION OF PARKING AREAS

Prior to construction, the Solar Site perimeters will be enclosed with security fencing composed of 6-foot tall chain-link fencing topped with barbed wire for a total height of 8 feet. Perimeter security fencing will consist of a total of 165,273.2 linear feet (~31.3 linear miles). A maximum

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of 39,600 linear feet (7.5 linear miles) of additional fencing may also be installed around individual solar developments within the Solar Development Footprint. The security fencing will be permeable to movement of wildlife. The fencing will remain in place during the operation of the solar facilities to provide security, and will be removed during decommissioning, at which time the fencing will be replaced with permanent perimeter fencing constructed of three or four strand barbed wire.

GEOTECHNICAL DRILLING AND TESTING

Each site will be tested for geotechnical conditions (soil strength and compaction) by performing field density tests or other acceptable methods. A track mounted drilling rig and a support truck will be used to accomplish boring.

GRADING AND COMPACTING OF ROADWAYS

Temporary and permanent roadways shall be prepared using standard grading and compaction techniques. Grading of roads shall be minimized by following existing topography. Heavy earth-moving equipment that will be used in grading and compaction may include: graders, scrapers, dozers, sheep's foot rollers, vibrating rollers, back-hoes, excavators, and other equipment as necessary.

INSTALLATION OF SIGNAGE

A variety of signs at a variety of locations will be installed including caution or warning signs for high-output electrical systems, signs designating limits on vehicle speed, stop signs, yield signs, no trespassing signs, signs to direct traffic, signs to indicate ecologically sensitive areas, and other similar signs. Signs will be affixed to fences whenever possible, but some free standing signs will be installed.

MANAGING WASTE

Non-hazardous waste generated from the project, including paper/plastic, cardboard, wire, wooden spools, pallets, and other waste and packaging materials, will be removed on a weekly basis from the Solar Sites. Hazardous materials may include, but may not be limited to, fuels, oils, lubricants, hydraulic fluids and solvents. The materials shall be stored properly and Material Safety Data Sheets (MSDS) shall be available on-site. PV panels that are damaged or become otherwise inoperational will be removed from the site. It is anticipated that much of the metal and glass material used in the PV solar panels will be recycled, and will not contribute to local landfills. Hazardous materials and waste shall be managed in accordance with federal, State and local regulations.

SURVEYING AND STAKING

Prior to construction, site surveys shall be performed to locate various property corners, property boundaries, and to complete topographic and elevation mapping. Surveying will also be needed to establish locations of solar arrays, staging areas, fencing, underground conduits, and other components of the project.

PLUGGING AND ABANDONING WELLS

There are three known previously plugged and abandoned oil wells located on the Solar Sites. The three oil wells are all located on Site 5-S. The wells will be leak tested. In the event of failure, remediation action will be taken, as directed by the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR).

Construction Activities

Several activities that occur during pre-construction will also occur (with occasional slight modification) during construction. These include: 1) Delivery of materials and equipment, 2) Drainage, erosion, and dust control, 3) Maintaining staging areas, 4) Fencing, gates, lighting, and construction of parking areas, 5) Installation of signage, and 6) Managing waste.

Construction of the project will occur in a series of solar array blocks, each averaging approximately 8.64 acres in size and each producing roughly 1 MW of electricity (depending upon technology). However, because some land area will contain other project related facilities, such as operations and maintenance buildings, meteorological stations, staging areas, an average of 1 MW per 8.64 acres of total Solar Development Footprint may not be obtained. Nonetheless, 8.64 acre block size per MW is assumed

The following assumptions were used to calculate construction-related vehicle trips:

- Paving of the access road was estimated to cover 10 acres and would last 1–2 months at the beginning of construction in 2011.
- Construction of solar arrays was estimated to be constructed at a rate of 757.5 acres per year over 8 years from 2011 through 2018.
- Construction employee trips:
 - An average of 200 employees per day was assumed.
 - Employees were estimated to travel a roundtrip distance of 40 miles per day during 260 working days per year (Workers will originate from Maricopa, Taft,

and Bakersfield. However, to account for the worst case scenario, the roundtrips are estimated from Old River Road to Bakersfield).

- Construction delivery truck trips:
 - Twelve delivery trucks per 1 MW was assumed.
 - Delivery trucks were estimated to travel from the Port of Long Beach with a roundtrip distance of 260 miles per day during 260 working days per year.

It is anticipated that multiple sites will be undergoing construction activities at any given time, and that it will take from 12 to 18 months to complete construction on any given site.

Various equipment will be utilized for the project, including, but not necessarily limited to, excavators, graders, lightweight trucks, dump trucks, flatbed trucks, support pickups, water trucks, concrete trucks, forklifts, end loaders, cranes, truck-mounted pole hole auger, line truck with air compressor, scrapers, motor graders, backhoe/loaders, truck mounted cranes, dozers, grade-all, pad drum vibratory roller, conductor reel and pole trailers, bucket trucks, truck-mounted tensioner, and puller and trenchers.

CONSTRUCTION OF OPERATIONS AND MAINTENANCE BUILDING AND METERING STATIONS

The project sites will include a single operations and maintenance building adjacent to the solar fields. The building will include sufficient on-site parking as required in the County Zoning Ordinance (Section 19.82), and possible storage and equipment warehouse areas. The operations and maintenance buildings may also contain offices and storage space, bathrooms, and a break area. The total size of each operations and maintenance building will not exceed 1,800 square feet. Septic systems will be installed to accommodate sanitary needs as required by the County Environmental Health Services Department.

A maximum of two meteorological monitoring stations, constructed on concrete pads, not to exceed 400 square feet in area (each), will be constructed on the project site to track insolation temperature, wind direction, and speed.

CONSTRUCTION OF SOLAR ARRAY/MODULE/ELECTRICAL ASSEMBLY AND CONSTRUCTION

The solar fields will be constructed of either crystalline silicon or thin film PV (including concentrated PV) technology on tilted or horizontal single-axis trackers, or fixed tilt supports. If tilted trackers are used, the PV modules will be mounted south-facing and tilted about 15 to 25 degrees from horizontal. Tilted tracker units will be arranged in east/west-oriented rows and be self tracking or connected by drive shafts to drive motors that rotate the solar panels from east to west to follow the sun throughout the day. If used, the drive motors will be located approximately every 1,200 feet along each east/west row and will be mounted on small concrete

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foundations, approximately 8 feet by 12 feet in area and approximately 2 feet thick. The highest point on the tilted tracker units (the uppermost solar panel) will be approximately 22 feet above the ground surface.

GRADING AND COMPACTING

The site access roads, inverter areas, and other plant areas will be prepared using standard grading and compaction techniques. Topographic contouring will not occur. Grading of roads will be minimized to the greatest extent possible. The Solar Sites shall be graded to direct potential flood waters into channels adjacent to the existing and proposed right of ways, without increasing the water surface elevations more than one-foot (Kern County Municipal Code, Section 17.48: Floodplain Management Code). These activities will result in disturbance to 3,700.8 acres.

RECONDUCTORING AND INSTALLATION OF OVERHEAD TRANSMISSION LINE SYSTEMS

Reconductoring and Installation of Overhead Transmission Line Systems

Construction and upgrade of structures for alternating current (AC) collection and distribution systems will include layout, drilling, installing, and backfilling foundations, as well as activities associated with stringing of new transmission lines (Figure 2-3). Trucks, cranes, drills, and other heavy line equipment will be utilized to install the new structures, and lines may be installed by low-flying helicopter. Transmission line system activities will be conducted either by PG&E or by a private subcontractor (under contract to Maricopa Sun, LLC). Certain transmission activities occurring outside of the Solar Sites are expected to be covered under a separate HCP held by Pacific Gas & Electric Company (PG&E) (Jones & Stokes 2006) as discussed below.

In addition to on-site substations, the following transmission related activities will be conducted by a private subcontractor under contract Maricopa Sun, LLC and will be Covered Activities under the Draft HCP:

- A short segment of new transmission line (gen-tie line) will be installed to connect Site 5-S to the existing 69kV Maricopa-Copus transmission line. Site 5-S will be connected to the existing transmission line just south of Site 5-S via an approximately 300 foot-long gen-tie line (Figure 2-3). A maximum of three new wooden pole installations and one replacement of a wooden pole at the point of interconnection (POI) with a tubular steel pole (TSP) will be required to accommodate the new gen-tie line. All pole replacements will occur within the PG&E right-of-way easement on lands owned by Maricopa Orchard, LLC. The ground disturbance associated with the installation of each new pole and the replaced pole would be a maximum of a 50-foot radius, for a total of 31,415 square feet or 0.72 acre. One of the new poles would be placed within the project site,

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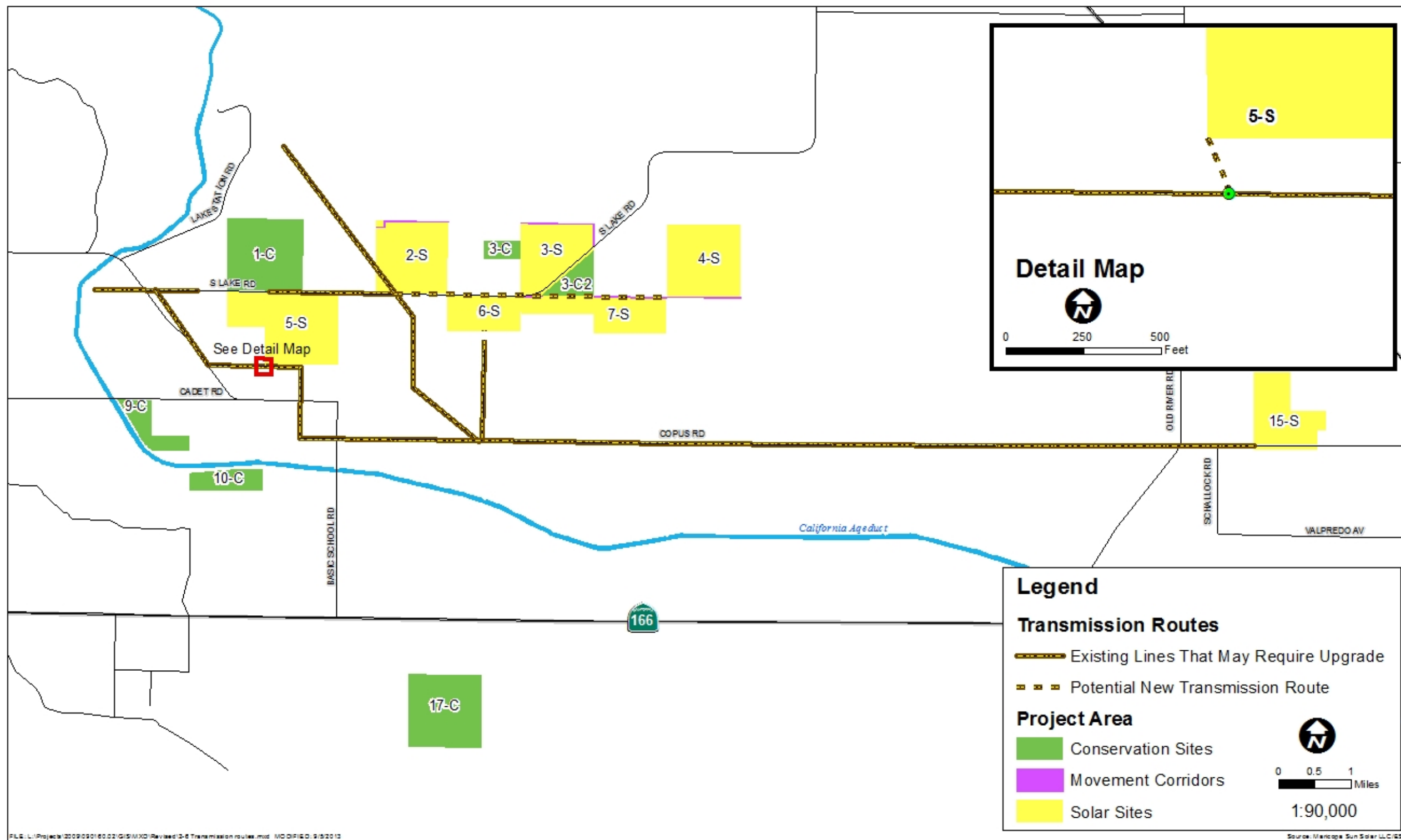
which consists of disked lands. All other poles would be placed within an existing orchard, and the installation of these poles may require some orchard trees to be removed.

The following transmission related activities will be conducted by PG&E and will be Covered Activities under the PG&E HCP (Jones & Stokes 2006):

- Up to 10 wooden poles may need to be replaced along the existing Maricopa-Copus 69kV transmission line. Five of those poles would be located to the east of the POI, and five would be located to the west of the POI. The area of disturbance associated with those pole replacements would be a maximum radius of 50 feet around each pole, totaling 78,537 square feet or 1.8 acres. The five poles to the east of the POI are located within an existing orchard (with a 0.9 acre potential disturbance area) and some orchard trees may need to be removed to allow adequate work space for the pole replacements. The five poles to the west of the POI would be located within disked lands (with a 0.9 acre potential disturbance area).
- Utility upgrades associated with the development of a 400-acre solar development on Site 15 include: installation of 20 TSPs along Copus Road between the project site and the Lakeview substation or the installation of lattice steel towers (LSTs) as an alternate to the TSPs, pulling and tensioning at each TSP or LST location, potential underground installation of communications cable along the gen-tie route between the project site and Lakeview substation, expansion of the Lakeview substation, expansion of the Copus substation, and installation of telecommunications and related equipment at the Old River substation and Wheeler Ridge substations.
- Up to 20 TSPs or LSTs with 20-foot by 20-foot cement bases would be installed along 2,700 feet of Copus Road between the project site and the Lakeview substation. The towers would be placed on either the north or south side of Copus Road. Work areas would be confined to a maximum area of 50-foot radius around each tower, resulting in a maximum total disturbance area of 157,075 square feet or 3.6 acres. An additional 157,075 square feet, or 3.6 acres, is assumed to be needed for the pulling and tensioning sites.
- Communications cables may be installed underground between the project site and Lakeview substation. The cables would be installed along the 2,700 feet distance where TSPs or LSTs are installed. Underground installation of cables would require the excavation of a trench up to 4 feet deep and 2 feet wide, resulting in a disturbance area of approximately 10 feet wide by 2,700 feet long, or 0.62 acre. The trench would be installed either along the north side or south side of Copus Road, depending upon where

the TSPs or LSTs are installed. Both the north and south sides of Copus Road between the project site and Lakeview substation are intensively cultivated agricultural lands. Alfalfa, asparagus, carrots, and other row crops are the primary agricultural crops along the north side of Copus Road, and grapes and alfalfa are the primary crops to the south of Copus Road. The land is cultivated up to the pavement edge of Copus Road on both sides of the road, but on the north side of the road there is sometimes a dirt road along the southern borders of fields with a narrow band of weedy vegetation between Copus Road and the dirt roads.

- PG&E will also conduct various upgrades within their existing Copus, Maricopa, Midway, Lakeview, and Taft substations. These upgrades are generally related to communications and safety protocols required by PG&E. All upgrades will be conducted within the fenced footprints of these existing facilities and do not require the expansion of any substation. Because these upgrades will occur within existing fenced facilities that do not contain habitat that would support sensitive biological resources, significant impacts to biological resources will not occur.
- Upgrades to and expansion of the Lakeview substation may be required by the project. The footprint of the substation may need to be extended to the west by 300 feet and to the south by 200 feet, thus enlarging the substation by approximately 235,000 square feet, or approximately 5.4 acres. The removal and replacement of an existing control building, including concrete foundation, may be required. The installation of a six circuit breaker ring-bus and upgrades of other equipment may be needed. Several entrances of existing lines into the substation will need to be reconfigured, resulting in the removal of up to five existing wooden poles and the installation of up to four new light duty steel poles and up to six new TSPs. The expansion areas of the Lakeview substation are completely within cultivated croplands consisting of grapes (to the south) and alfalfa (to the west). All pole replacements and new poles would be located within existing agricultural fields (alfalfa or asparagus) or along previously cleared dirt roads.
- Upgrades to and expansion of the Copus substation may be required by the project, which would include extending the substation footprint to the south by 100 feet and to the west by 150 feet, resulting in an enlargement of the existing footprint by approximately 72,500 square feet, or 1.7 acres. Fencing would need to be replaced, a small enclosure for telecommunications equipment may need to be installed, and a new control building may need to be located within the expanded footprint area. The expanded footprint and all associated upgrades would be located entirely within an existing citrus orchard.



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LANDSCAPING/SITE ENHANCEMENT

Drought-tolerant, native plants in pots that are a minimum 15-gallon size will be planted along the security fence directly adjacent to local county roads to provide a visually appealing view from public roadways. Plants will be watered with drip irrigation or by water truck.

PAVING OF ACCESS ROADS AND BUILDING AREAS

With the exception of Site 4-S, each proposed Solar Site has existing paved road access from either South Lake Road (Sites 2-S, 3-S, 5-S, 6-S and 7-S) or Copus Road (Site 15-S). Paving of one access road to Site 4-S will occur. The access road to Site 4-S will encompass paving approximately 3,520 linear feet of roadway, measuring 20 feet in width. Driveway approaches that are 12 feet wide by 60 feet long will also be paved at each Solar Site. Where paving is necessary, construction of paving may take up to two months to complete for each Solar Site, and will occur at the beginning of construction.

POST CONSTRUCTION SOIL TREATMENT

After clearing, grading, earth moving, and/or excavating, once initial leveling has ceased, all inactive soil areas within the construction site shall be either: (1) seeded using native plant species and watered until plant growth is evident; (2) treated with a dust palliative; or (3) watered twice daily until soil has sufficiently crusted to prevent fugitive dust emissions.

Operations and Maintenance Activities

Some of the previously mentioned activities will also occur during the Operations and Maintenance phase. These include: 1) Delivery of materials and equipment, 2) Drainage, erosion, and dust control, 3) Maintaining staging areas, 4) Fencing, gates, lighting, and construction of parking areas, and 5) Installation of signage. Activities that will occur on a recurring basis during the operations and maintenance period include regular panel washing and routine maintenance.

Implementation of the project will result in the following: placement of PV solar arrays and associated infrastructure, including inverters, transformers, circuit breakers, a substation, and operations and maintenance buildings on approximately 3,700.8 acres of vacant land. Solar equipment has a lifespan of up to 25 years, during which operations and maintenance activities will be conducted. Operational activities are limited to monitoring facility performance, responding to utility needs for facility cleaning and adjustment, and on-site security.

Trucks (pickup, flatbed), forklifts, and loaders may be used for routine and unscheduled maintenance, and water trucks will be used to wash solar panels and prevent excessive dust. Large heavy-haul transport equipment will not be routinely needed, but may be used for specific equipment repair or replacement.

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METER READING

Physical meter reading may be required on a limited basis to confirm automated readings.

MONITORING ALARMS/SECURITY

Perimeter security fencing will be maintained during construction and operational phases of the project.

OPERATION OF SOLAR MODULES

Solar modules will operate 7 days a week, 365 days a year. The system is solid state with no moving parts, although depending upon the chosen design, some Solar Sites may be equipped with solar panel arrays that provide tracking of the sun. Those designs that track the sun have motors and other moving parts. Maintenance activities will include repairs to equipment including transformers, water/oil separator systems, electrical equipment, road and fence repairs, panel and inverter repairs, visual inspections of transformers and water/oil separator system, visual inspection of panels, inverters, structures, cabling and wiring, replacing and/or upgrading panels, inverters, transformers, wiring, cabling, power lines, mounting hardware, monitoring systems and panel cleaning systems as needed. Water trucks will be utilized twice per year to clean solar panels (approximately 1 gallon of water for each panel).

SOLAR PANEL CLEANING AND MAINTENANCE

Regular maintenance of the solar panels will involve cleaning and testing of proper function on an ongoing basis. Cleaning of the solar panels will occur as much as twice yearly during the operations and maintenance phase and will involve the use of water trucks driving between solar panels throughout the Solar Development Footprint. The following assumptions were used to calculate long-term, operational vehicle trips:

- Operational water truck emissions:
 - Module cleaning involving a negligible number of personnel for short periods of time would require a total of 4,412 truck trips per year. This averages approximately 12 trips per day.

- Based on the location of the available water wells proposed to provide water for panel cleaning, it is anticipated that the trucks would travel approximately 5 miles between wells and the solar facilities.
- Operational worker truck emissions:
 - Two worker trucks would service the project site.
 - Worker trucks were estimated to travel a total of 4 miles per truck per day twice a year on site.
 - Worker trucks were estimated to travel a total of 60 miles per truck per day twice a year off site.

It is anticipated that cleaning will be conducted by eight water trucks at a given time each of which can make eight trips per day to accomplish cleaning of all 4,411,902 solar panels over all Solar Sites (2 gal/solar panel/year for a total of 8,823,804 gals of water/year at 4,000 gal/truck capacity). The water is expected to come from one or more unspecified existing wells within the Wheeler Ridge Maricopa Water District. In the event water is not available from wells within the District, an alternative source will be located and transported to the site to accomplish solar panel cleaning. While cleaning of the PV panels with water truck in from local sources is proposed as part of routine operations, some panel cleaning can be expected to occur naturally as a result of wind and rain. Also, while dust build-up on the PV panels will reduce the efficiency of the panels, washing in accordance with a strict schedule is not absolutely essential to the operation of the facility. In other words, the facility will continue to produce electricity, albeit at reduced efficiency, if the panels become coated with dust.

Routine maintenance of the solar facilities will involve infrequent use of heavy equipment including forklifts, heavy haul trucks and vegetation removal equipment. The majority of maintenance activities will be conducted at night when solar facilities can be safely powered down. Night time maintenance activities will occur very infrequently, but when they do occur they will present an increased risk to San Joaquin kit fox and Tipton kangaroo rats. Measures are in place to ensure potential impacts to Covered Species due to night activities are avoided or minimized to the extent possible.

VEGETATION AND WEED MANAGEMENT

The Solar Sites will be disked on a biannual basis; however, weedy vegetation develops in low amounts between disking events. In scattered localities, low growing tamarisk is present and will need to be removed more aggressively. Residual water from panel cleaning activities could stimulate vegetative growth. Vegetation removal is expected to occur twice per year. Chapters 5 and 6 of the Draft HCP (Appendix B) contains a Vegetation Management strategy.

Decommissioning Activities

Solar equipment has a lifespan of up to 25 years. At the end of the project operation term, the project will be decommissioned and deconstructed. Prior to any decommissioning activities, surveys will be conducted to assess the extent to which Covered Species have occupied the Solar Development Footprint. All minimization, avoidance, and mitigation measures appropriate for presence of Covered Species, such as avoidance barriers, pre- and post-activity sweeps, and monitoring, shall be implement prior to and during decommissioning activities.

The following list and descriptions of activities comprise the Covered Activities that will be implemented during the decommissioning phase.

DRAINAGE, EROSION, AND DUST CONTROL

Drainage and erosion control features will be left in place and will not be removed by decommissioning activities. Although most of these features will be composed of earthen berms, there will be some culverts and pipes that will be left abandoned and in-place. Keeping these features in place will aid in management of these lands as Conservation Sites by reducing and minimizing periods of flooding and erosion events. Dust control during decommissioning activities will be consistent with those activities and methods previously described.

MANAGING WASTE

Hazardous and non-hazardous waste will be managed during the operations and maintenance phase. Very little activity is expected on any of the solar facilities during operations and maintenance and so waste material is expected to occur in very low levels. As with any other phase of the solar project, daily waste management will occur when workers are present on-site and waste will be deposited in the appropriate close containers. As noted above, PV panels that are damaged or become otherwise nonoperational will be removed from the site. It is anticipated that much of the metal and glass material used in the PV solar panels will be recycled, and will not contribute to local landfills. If waste occurs, hazardous waste will be removed from the solar facilities immediately after a spill or upon the finding of the waste, and non-hazardous waste will be removed on a weekly basis.

REMOVAL OF ACCESS ROADS AND FENCING

All paved and graveled access roads, parking and staging areas, and access driveways will be removed. It is estimated that 1,822 cubic yards of materials will need to be removed from paved roadways and 37,268 cubic yards of material will be removed from paved staging and parking areas. An additional 6,708 cubic yards of aggregate will be removed from graveled roads. All security fencing will be removed. Permanent perimeter fencing (constructed of 4-strand barbed wire or equivalent) will be installed around the Solar Sites.

REMOVAL OF BUILDINGS, FOUNDATIONS, AND CONCRETE PADS

The removal of operations and maintenance buildings will be accomplished by use of a front-end loader and dump truck. It is estimated that a total of 600 cubic yards of material consisting of cement foundations, roofing materials, and wooden structural components will be removed from each site, totaling 4,200 cubic yards of material from all sites. All leach fields and septic tanks will be left in place as their removal will involve greater ground disturbance. All trenches or holes will be filled with soil from the project site. After demolition is complete, soils will be leveled using heavy machinery including disks, graders, and/or ring-rollers.

REMOVAL OF ELECTRICAL CABLING

All underground conduits housing electrical cabling will be left in place, but the conduits shall be cut off below ground level and all trenches or holes will be filled with soil from the project site. Electrical cabling contained within the conduits will be removed.

REMOVAL OF SOLAR SYSTEMS

Solar infrastructure removal will include the removal of rack system, tracking system and motors, PV panels, inverter/transformer and control room structures, electrical conduits and wiring, switch yards, inverter pad and pads such as tracking motor pads. Concrete pads and foundations will be broken up into smaller pieces and hauled away from the project site for disposal. The removal of infrastructure and facilities will be conducted in a manner that minimizes ground disturbance and dust, and disturbed soil from removal of support structures and trenches will be replaced.

VEGETATION AND WEED MANAGEMENT

During the decommissioning phase, all planted ornamental vegetation and irrigations systems will be removed.

Description of the Conservation Measures

The following is excerpted from the Draft HCP, dated August 2013, which is contained in Appendix B. Refer to the Draft HCP for additional information.

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The Draft HCP provides for 1) Management and maintenance activities associated with movement corridors and conservation sites, including monitoring and reporting activities and 2) Activities associated with implementation of the conservation program described in the Draft HCP.

Activities to preserve and enhance habitat and to avoid and minimize Covered Species are included as Covered Activities. These activities may be conducted during all phases of the project as well as management and monitoring activities conducted on Conservation Sites as indicated within the descriptions below. These activities may be conducted on both the Solar Sites and the Conservation Sites.

ON-SITE HABITAT PRESERVATION

Movement Corridors totaling 33.8 acres will be preserved. Currently, these Movement Corridors contain disked lands that have little value for wildlife. The purpose for providing Movement Corridors is to encourage wildlife to move through the region by providing corridors of habitat that can be successfully used by wildlife, particularly the San Joaquin kit fox. By enhancing the habitat within the Movement Corridors, not only can movements of the San Joaquin kit fox and other wildlife be facilitated, but habitat can be provided to encourage occupancy by all other Covered Species (blunt-nosed leopard lizard, Tipton kangaroo rat, Nelson's antelope squirrel, and western burrowing owl).

HABITAT ENHANCEMENTS

Habitat enhancements will be provided within the Movement Corridors to facilitate their use by Covered Species. Enhancements will be installed during the construction phase of the project and will be monitored and maintained during the operations and maintenance phase of the project. During the decommissioning phase these Movement Corridors and their enhancements will be protected. Subsequent to decommissioning, the Movement Corridors will be incorporated into the conservation easement placed on the abandoned Solar Sites and management will follow the Habitat Management Plan, Maricopa Sun Solar Complex (Appendix C of the Draft HCP).

Habitat enhancements provided within the Movement Corridors are as follows:

Artificial raised earthen berms will be created to provide refugia for small mammals during flooding events, and to provide burrowing, denning, and perching opportunities for a variety of species. San Joaquin kit fox dens, including escape dens and pupping dens, and burrowing owl perches will be installed. The raised earthen berms will be created along Movement Corridors. All berms shall be created using topsoil from the project site. A general access dirt road may be maintained alongside the ditch. The berms shall be linear to facilitate construction by

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mechanical means, but they will not necessarily be continuous; gaps will be provided at strategic locations to allow flood waters to pass without causing undue damage to the berms.

ARTIFICIAL SAN JOAQUIN KIT FOX (*VULPES MACROTIS MUTICA*) DENS

Artificial dens shall be placed at a rate of eight per mile along Movement Corridors. One in ten dens shall be of a natal den (or pupping den) design while the remainder shall be of the more simple escape den design. Dens shall be constructed following standardized configurations as detailed in Appendix D of the Draft HCP (Appendix B).

BURROWING OWL (*ATHENE CUNICULARIA*) PERCHES

T-posts shall be driven into the top of the earthen berms at a rate of eight per linear mile along Movement Corridors. A two foot long section of t-post shall be welded at a right angle to the top of the main t-post to provide a suitable perching surface. Burrowing owls are expected to use artificial dens constructed for kit fox and so additional burrows specifically constructed for the burrowing owl would not improve the Movement Corridors for that species.

RESTORATION OF VEGETATION USING NATIVE SPECIES

There is sufficient evidence to conclude that lands along the Movement Corridors will not need to be restored; in periods between disking, many of the sites naturally revegetate with a variety of native species including alkali seepweed (*Suaeda* sp), saltbush (*Atriplex* sp.), cheeseweed (*Isocoma acradenia*), and various other native and non-native annuals. Initial revegetation is likely to consist of weedy and somewhat invasive species such as London rocket (*Sisymbrium ireo*) and five-hooked bassia (*Bassia hyssopifolia*), although over time these would diminish as other species become established. The natural revegetation of these areas, even with weedy species, is anticipated to support native wildlife species, including the Covered Species. Nonetheless, there may be specific instances where seeding will be needed to re-establish a semblance of native habitat. All Movement Corridors shall be evaluated annually for a period of three years. If after three years, the species composition and vegetation cover is less than desired, a revegetation program shall be developed and implemented at that time. The desired vegetative cover is from 500 to 1,200 pounds of residual dry matter consisting of a minimum of five native species per acre. Long-term management of these lands through managed grazing and restoration, where needed, shall be implemented as described in Section 5 of the Draft HCP, *Conservation Program*. Enhancements, management, and monitoring of the Conservation Sites shall follow the Habitat Management Plan, Maricopa Sun Solar Complex (Appendix C of the Draft HCP).

Third-party Biological Consultant

Prior to the start of any Covered Activities, Maricopa Sun, LLC shall submit to the Service for their review and approval, the qualifications of all third-party biological monitors (biological

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monitors) that will be involved with the Maricopa Sun Solar Complex. The biological monitors will be given the authority to stop any work that may result in the take of listed. The project lead biological monitor will be the contact for any employee or contractor who may inadvertently kill or injure a Covered Species, or anyone who finds a dead, injured, or entrapped individual of a Covered Species. The project lead biological monitor shall possess a working cellular telephone whose number shall be provided to the Service. In the event of take of an individual (capture or kill) of a Covered Species, the project lead biological monitor will contact the Service by phone within 24 hours of the incident and by writing within 5 working-days of the incident.

Pre-construction Surveys

Pre-construction surveys are a requirement under the Draft HCP to provide information used to minimize or avoid the impacts of solar development on Covered Species. Pre-construction surveys shall be conducted 14 days prior to the inception of any project related activity that involves on-site work (e.g., staking and surveying, compacting, grading, etc.). In the event a break in work occurs for a period of 14 days or more, pre-construction surveys will have to be repeated before work may resume in that specific area. Portions of the Permit Area that are not scheduled for developed will not require pre-construction surveys until such time as they are scheduled for development. Pre-construction surveys will be conducted by biological monitors affiliated with a third-party biological consultant and approved by the Service prior to the start of any biological monitoring.

Biological monitors will conduct transect surveys with transects spaced 30 meters apart and with the assistance of binoculars to ensure 100% coverage of the Solar Site. Biological monitors will be focus on detection of Covered Species or their sign, but will also note the presence of other plant and wildlife species. If individuals or sign of Covered Species are detected, the biological monitor will document the observation with the following data:

- Species,
- Type of observation (individual(s), sign, or other),
- Written location and GIS waypoint of observation,
- General physical conditions of observation (e.g., size of burrow, condition of burrow, number of openings of burrow, etc.),
- Time of observation,
- Date of observation,

- Any ongoing work in the vicinity of the observation (in the event that the pre-construction survey is being performed due to a 14-day break in work), and
- Photographs of the individual or sign, as possible.

Appropriate measures, as outlined in the Draft HCP, will be implemented to ensure that project impacts are minimized or avoided to the extent possible. Such measures may involve establishing an Ecologically Sensitive Area (ESA) and associated buffers to separate Covered Species from project activities, restriction of high impact activities that generate significant ground vibration or noise at or above 120 dBA (A-weighted), and a reduction in speed limits in the vicinity of the ESA. ESAs will be staked and/or flagged to prevent inadvertent trespass. The presence of the ESA will be reported and uploaded to the geo-database.

Pre- and Post-activity Sweeps

Daily pre- and post-activity sweeps (sweeps) are a requirement under the Draft HCP to provide information used to ensure project impacts to Covered Species are minimized or avoided to the extent possible. Sweeps will be performed by biological monitors prior to commencement of daily work (pre-activity) and directly after daily work has been completed (post-activity).

Pre-activity sweeps will involve a morning tailboard meeting with the construction foreman to inform the biological monitor of the location of planned work for the day. The biological monitor will then arrive at the work location to perform the pre-activity sweep no more than 30 minutes prior to work crews arriving. Pre-activity sweeps will be performed in daylight and biological monitors will plan for enough time to complete a thorough sweep before work crews arrive. A pre-activity sweep will involve a thorough inspection of the work site focusing on the following:

- detecting any new sign of Covered Species (e.g., newly constructed burrows, dens or nest, scat, tracks);
- detecting individuals of Covered Species;
- inspecting all staged materials and vehicles for the presence of Covered Species that may have taken up shelter in the material or vehicle over night;
- identifying proper installation of BMPs according to SWPPP guidelines;
- identifying any ESAs already present in the area and ensuring that buffers are well demarcated;
- identifying any potential hazards to Covered Species that need to be addressed;

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Once a pre-activity sweep has been completed, information from the sweep will be documented in the daily report and the crew foreman will be notified of any finds and/or ESA present in the work area. If any Covered Species or ESAs are present, the biological monitor will provide an on-site tailboard meeting to inform work crews of the species discovered/present, the need to delay or stop work in the event that an individual is present, and/or the ESA avoidance buffer(s) established in the area.

Post-activity sweeps will involve a detailed inspection of the work site as soon as possible upon completion of work. Post-activity sweeps will be performed before work crews leave for the day so that crews will be available to address any remedial actions necessary. Post-activity surveys will involve the following inspections of the work site:

- presence of any trash items;
- presence of any vehicle or other equipment spills or discharge;
- correct installation of BMPs according to SWPPP requirements;
- if present, proper upkeep of ESA buffers;

The biological monitor is responsible for ensuring that any and all issues discovered during the post-activity sweep are reported to the crew foreman and that the issue is corrected before crews leave for the day. Findings of post-activity sweeps will be documented in daily reports.

Construction Monitoring

Daily construction monitoring is a requirement under the Draft HCP to ensure project impacts to Covered Species are minimized or avoided to the extent possible. During all phases of the project, a biological monitor will accompany work crews while conducting work on site. Biological monitors will be responsible for aiding work crews in avoiding ESAs and will watch for potential impacts to Covered Species during work activities. The biological monitor will have the authority under the Draft HCP to stop work in the event that a Covered Species is detected in proximity of the work site or in the event that an ESA is or is threatened with being encroached on. If work must be stopped the construction supervisor and project lead biologist will be notified to assess the severity of the situation. Work may continue once it has been determined that no take will occur by proceeding. Daily reporting for construction monitoring will be as outlined in Chapter 7 of the Draft HCP.

General Avoidance and Minimization

The following general avoidance and minimization measures will be implemented during construction activities to minimize potential incidental take of Covered Species:

1. Where construction activities will occur (including any ground disturbance), pre-construction surveys (see Pre-construction Surveys, this section) will be conducted by authorized biological monitors no more than 14 days prior to the beginning of such activities. Immediately prior to construction, additional clearance surveys will be conducted. If discovered, Covered Species will be avoided to the extent possible; construction activities will always be suspended to avoid take of San Joaquin kit fox and blunt-nosed leopard lizard. A biological monitor will be on-site at all times during construction activities (discussed in section 2.3.2) to ensure that impacts of Covered Activities on Covered Species are minimized or avoided to the extent possible.
2. Trapping and holding (or relocating) Covered Species, which will involve handling, could be required to avoid lethal take of Tipton kangaroo rats, Nelson's antelope squirrels, or western burrowing owls during the decommissioning phase of the project. Trapping will only be conducted by a Service-approved biologist with appropriate handling permits. Blunt-nosed leopard lizards and San Joaquin kit fox will be avoided entirely through implementation of avoidance measures outlined below. The trapping and relocation of Covered Species shall adhere to methodologies specified in the Relocation Plan contained in the Draft HCP (Appendix B) for the western burrowing owl and the relocation plan for the Tipton kangaroo rat and Nelson's antelope squirrel.
3. Maricopa Sun, LLC shall develop and implement an Employee Education Program in which each of its employees and leasees, including employees of contractors and subcontractors, who work on the construction sites, are informed about the sensitive biological resources associated with the project. This program shall be developed by the third-party biological consultant and will consist of an on-site or training center presentation including a slide show and written materials for each participant. The program shall discuss the locations and types of sensitive biological resources on and near the Solar Sites, Conservation Sites, and Movement Corridors; present an overview of the laws and regulations governing the protection of biological resources and the reasons for protecting these resources; discuss the various protection measures to be implemented; and identify official points of contact should questions or issues arise. Each participant shall sign a statement declaring that the individual understands and will abide by the guidelines set forth in the program materials. The program shall be presented annually and as needed to ensure that all workers receive training prior to being allowed to work on the sites, and to ensure compliance with all protection measures. Separate trainings will be conducted for the construction, operations and maintenance, and decommissioning phases. A list of all participants shall be maintained and provided to wildlife agency representatives upon request. Workers will be trained and directed to recognize Covered Species (live or dead) that have been killed or injured. Workers will

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coordinate with project biologists to assure accurate records of the locations of any Covered Species that was injured or killed.

4. Any incidence of take of individuals of Covered Species will be reported to the Service by phone within 24 hours and in writing within five business days. Take of individuals includes capture (accidental entrapment and intentional trapping) and lethal take.
5. Construction activities shall generally be restricted to daylight hours to avoid impacts to Covered Species. Only upon prior approval by the Service and California Department of Fish and Wildlife (CDFW, formerly California Department of Fish and Game) may work be performed during hours of darkness and permitted work will be limited to the use of handheld tools, such as hand-operated power tools. Vehicle use during hours of darkness will be limited to a light-weight, pick-up truck style vehicle. Biological monitors will be required to escort all personnel and transport vehicles after dark. Daytime speed limit will be 10 miles per hour. Speed limit will be reduced to 5 miles per hour during all night time activities on the project site.
6. Due to noise susceptibility of species such as the Tipton kangaroo rat, noise levels at a distance of 300 ft. from the edge of work areas shall be measured with noise meters. These measurements need only be taken in construction areas that are located within 300 feet or less of areas known to be occupied by Covered Species. Occupancy by Tipton kangaroo rats will be determined by trapping in the vicinity of observed kangaroo rat burrows or, more conservatively, may be assumed based on the presence of burrows fitting the description of a kangaroo rat burrow. Occupancy by Covered Species is determined by pre-project biological surveys, pre-construction surveys, pre-activity sweeps, and on-going biological monitoring. Biological monitors will coordinate with construction foremen during pre-activity sweeps to identify activities involving high levels of noise that will occur in close proximity to known locations of Covered Species and will ensure measurements are taken to monitor noise levels. The measured noise levels shall not exceed 120 decibels on the A-weighted scale (dBA) for a period of more than one hour with any eight-hour period. Where noise exceeds these levels, construction personnel shall erect temporary noise barriers to reduce noise levels to 120 dBA or less. This measure shall be implemented during all phases of the project
7. All materials staged on the project site, and especially in staging areas, shall be spaced so as to not provide areas suitable for Covered Species to seek shelter. At no time shall materials be haphazardly piled on the project sites. All materials shall be inspected thoroughly by the biological monitor prior to being moved.
8. Perimeter security fencing shall be inspected throughout the life of the solar facility project. Perimeter security fencing employing the raised fence design will be inspected at six month intervals and perimeter security fencing designed with wildlife pass-through

channels will be inspected once per month. All maintenance/repairs will be made within two weeks of being reported. Wildlife pass-through channels that are found to be blocked will be cleared as soon as possible to prevent interference with permeability of the fencing.

9. All trash generated, including packaging materials from equipment and supplies, food-related trash items (such as used sandwich wrappers, cans, bottles, and food scraps), and un-used or discarded equipment and supplies, shall be disposed of in covered containers and removed on at least a weekly basis.
10. Dogs and other pets shall not be allowed within the Permit Area.
11. No firearms shall be permitted in the Permit Area. Exceptions include agents of public law enforcement and security personnel.
12. A Stormwater Pollution Prevention Plan (SWPPP) shall be prepared for all project sites. The plan(s) shall include specific measures to be performed during construction periods that will prevent discharge into sensitive biological resource areas including wetlands, sensitive natural communities, or habitats occupied by Covered Species. Specific measures may include installation of hay bales, detention basins, or other means of intercepting excess runoff from the construction areas. Prior to final adoption, the SWPPP shall be reviewed by the project's lead biologist to ensure that adequate measures are included. The SWPPP shall not include lands or activities not covered in the Draft HCP.
13. No plants or wildlife shall be collected, taken, or removed, except as necessary for Covered Activities and then only by a permitted biologist. Salvage of native species that are to be removed is encouraged, but shall only be performed by a permitted biologist or other personnel trained to identify sensitive species and permitted to remove those species. Relocation of wildlife shall only be performed by biologists approved by the Service under the conditions specified in the Draft HCP and in the Relocation Plan for the western burrowing owl and the relocation Plan for the Tipton kangaroo rat and Nelson's antelope squirrel (Appendices E and F of the Draft HCP). Biologists shall possess appropriate animal-handling permits and all trapping and relocations will be conducted with prior approval of the Service and will be followed up with a written report within five business days.
14. Project-related vehicles shall observe a 10-mph speed limit in all project areas, except on county roads and State and federal highways. Nighttime construction traffic shall be prohibited except under prior agency approval. Off-road traffic outside of designated driving areas shall be prohibited.

15. Covered Activities shall generally be restricted to daylight hours to avoid impacts to Covered Species. During the operations and maintenance phase it will be necessary for some activities to occur at night. Vehicle use during hours of darkness shall be limited to only those vehicles necessary to perform the given work or to conduct necessary deliveries. Biological monitors shall be required to escort all personnel and their transport vehicles after dark. Speed limits shall be reduced to 5 miles per hour during all night time activities on the project site.
16. Covered Species may be attracted to den-like structures such as pipes, culverts, pallets, wire bales, and construction equipment. All materials and equipment that are stored on a construction site shall be securely capped or covered to prevent use by Covered Species. Materials and equipment should be thoroughly inspected for Covered Species before being buried, capped, or otherwise used or moved in any way. If Covered Species are discovered within staged materials or equipment, all activity in the immediate area shall stop until the Covered Species has left the material or equipment, and the biological monitor has determined that it is safe to resume work.
17. Perimeter security fencing shall be designed to be permeable to Covered Species and shall be inspected throughout the life of the Project. The perimeter security fence shall leave a minimum 4- to 6-inch opening between the base of the fence and the ground surface. The bottom of the fencing materials or other materials having sharp edges shall be knuckled (wrapped back to form a smooth edge) to protect wildlife that passes under the fence. Raised fencing shall be inspected at six-month intervals and any repairs necessary to maintain the permeability of the fencing shall be made within two weeks of being reported. Where raised fencing cannot be installed, passageways having openings of 4 to 8 inches in diameter constructed of PVC pipe or other suitable materials shall be installed every 100 feet along the fence perimeter. Perimeter security fencing designed with wildlife pass-through channels shall be inspected once per month. All fencing maintenance/repairs shall be made within two weeks of being reported. Wildlife pass-through channels that are found to be blocked shall be cleared as soon as possible to prevent interference with permeability of the fencing. No Project fencing shall be fitted with slats, which may entrap wildlife attempting to pass through it.
18. Temporary impermeable fencing or “barrier” fencing will be installed between work areas and areas where Covered Species have been documented to occur to prevent species from becoming exposed to adverse effects from Covered Activities. Occurrence of Covered Species will be documented during pre-project reconnaissance and protocol level surveys, pre-activity surveys, pre- and post-activity sweeps, and during on-going biological monitoring. Barrier fencing will be constructed of 36-inch-tall metal flashing

buried six inches below grade. The barrier fencing will be supported on one side (on the construction side of the fence) by stakes, posts of reinforcing bar, or T-posts. The fencing will be affixed to the supports in a manner that will not allow Covered Species to climb the fence (e.g., bolts or fasteners must be a minimum of 18 inches apart).

19. Trapping and holding (or relocating) Covered Species, which will involve handling, could be required to avoid lethal take of Tipton kangaroo rats or Nelson's antelope squirrels during the operations and maintenance and decommissioning phases of the Project. Trapping shall only be conducted by a USFWS-approved biologist with appropriate trapping/handling permits. Blunt-nosed leopard lizards and San Joaquin kit fox shall be avoided entirely through implementation of avoidance measures outlined below. The trapping and relocation of Covered Species shall adhere to methodologies specified in the Relocation Plan for the Tipton kangaroo rat and Nelson's antelope squirrel.
20. All trapping and relocations shall be conducted with prior approval of the USFWS, shall only be performed by USFWS-approved biologist with appropriate animal handling permits, and shall be followed up with a written report within five business days.

Construction supervisors shall notify the Service immediately if take of a Covered Species or listed species occurs.

Avoidance and Minimization of Habitat Disturbance

Solar Sites will be kept relatively clear of vegetation so that the sites are suitable for solar use. Management of vegetation within the Solar Development Footprints will include mowing and grazing on an as needed basis to lessen the risk of fire and to facilitate solar operations. Vegetation and habitat within the Solar Development Footprints will not be managed specifically for the benefit of Covered Species, but it is anticipated that Covered Species may become established within some portions of some or all of the Solar Development Footprints over time, and while operations and maintenance activities are occurring. The Solar Development Footprints will be monitored to gauge the distribution and occurrence of Covered Species, and to ensure maximum avoidance of Covered Species during operations. Vegetation and habitat within the Solar Development Footprint will be managed to meet the needs of the solar operations, however, and will not specifically be managed for habitat.

Within Movement Corridors and Conservation Sites, habitat will generally improve for Covered Species through the cessation of disking and if vegetation is not allowed to become extremely dense. As discussed further in Section 5.2.1 of the Draft HCP, vegetation density should be managed to maintain a 20% or less cover of shrubs, and a cover of annual forbs and grasses that is between 500 and 1,200 pounds per acre of residual dry matter. In addition to providing habitat

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for Covered Species, preventing vegetation from becoming “dense” will reduce fire risks and the potential for vegetation to interfere with project operations. Mowing (and managed grazing if appropriate) shall be used to maintain vegetation in a condition that optimizes its habitat value for Covered Species (as discussed further in Section 5.2.1 of the Draft HCP) and is suitable for project operations. As discussed in Section 5.2.3 of the Draft HCP (Monitoring), vegetation management may be adjusted to reflect the results of biological monitoring.

Species Specific Avoidance and Minimization

The following avoidance and minimization measures will be implemented during Covered Activities to minimize potential incidental take of individual Covered Species:

Avoidance and Minimization Measures for San Joaquin Kit Fox

To protect the San Joaquin kit fox, standard protection measures (Service 2011) shall be implemented prior to and during construction. These protection measures will also reduce the potential for project impacts to the American badger. These measures shall be implemented during construction, maintenance, and operations.

1. Pre-construction surveys shall be conducted within 14 days prior to the beginning of ground disturbance or construction activities, or any project activity likely to impact the San Joaquin kit fox. If any evidence of site occupation by Covered Species or other special-status species is observed, an exclusion zone shall be established by an approved biologist. Exclusion zones shall be placed in accordance with Service recommendations at the following radii:
 - Potential Den: 50 ft.
 - Known Den: 100 ft.
 - Natal/Pupping Den (Occupied and Unoccupied): Contact Service
 - Atypical Den: 50 ft.

If dens must be removed, they must be monitored for a minimum of three consecutive nights using cameras or tracking medium to determine kit fox use. If there is no kit fox activity for three consecutive nights, dens may be collapsed. If dens are actively being used by kit fox, no collapse of the den is permitted until the kit fox(es) have vacated the den. Destruction of natal dens and other “known” kit fox dens must not occur until authorized by the Service. Once kit foxes have been confirmed to have vacated the den, and Service approval has been obtained, dens may subsequently be hand excavated by a trained wildlife biologist. Replacement dens must be constructed in suitable habitat outside of the construction area;

2. Project-related vehicles shall observe a 10-mph speed limit during daylight hours in all project areas, except on county roads and State and Federal highways. Nighttime speed limit shall be reduced to 5 mph. Because kit foxes are most active at night, nighttime construction shall occur only with Service approval. Off-road traffic outside of designated driving areas shall be prohibited;
3. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of the project, all excavated, steep-walled holes or trenches more than five feet deep shall be covered at the close of each working day by plywood or similar materials. Holes and trenches less than five feet deep may either be covered or be provided with escape ramps at a rate of one ramp every 100 feet. Escape ramps may be constructed of earth fill or wooden planks with a slope no steeper than 45 degrees and, if wooden planks are used, perpendicular grooves or rungs shall be provided to aid in traction. All holes and trenches more than two feet deep shall be inspected daily for trapped animals regardless of whether work is occurring in that area. Before holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the procedures described under points 5 and 6 of this section will be followed.
4. Kit foxes are attracted to den-like structures such as pipes and culverts, and may enter stored pipes, becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipes are subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the Service has been consulted;
5. The solar operator shall appoint a representative to be the point of contact for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped individual. The point of contact's name and telephone number shall be provided to the Service. If any kit fox is inadvertently injured or killed during construction or operations, all work shall be immediately stopped until the cause of injury is determined and a plan to avoid any additional injury has been implemented in consultation with an approved biologist and the Service;
6. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape, or the Service shall be contacted for advice;
7. Any solar operator, or representative, contractor or subcontractor of a solar operator who inadvertently kills or injures a San Joaquin kit fox shall immediately report the incident to their point of contact. The point of contact shall contact the Service and CDFW

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immediately in the case of a dead, injured or entrapped kit fox. The CDFW contact for immediate assistance is State Dispatch at (916) 445-0045. State Dispatch will contact the local warden or biologist;

8. The Sacramento Fish and Wildlife Office and CDFW shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during Covered Activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal, and any other pertinent information;
9. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or project site;
10. No firearms shall be allowed on the project site;
11. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens;
12. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to kit fox;
13. Upon completion of the project, all areas subject to temporary ground disturbances including, for example, storage and staging areas, temporary roads, and pipeline corridors, should be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, CDFW, and revegetation experts; and
14. To allow for continued use by San Joaquin kit foxes and other species once construction has been completed, any and all perimeter security fencing shall be permeable fencing that does not create any barrier to species movement. Periodic monitoring of the fence shall occur to ensure that the fence remains permeable to allow San Joaquin kit foxes access to the Solar Sites, Conservation Sites and Movement Corridors. Periodic

monitoring shall occur on an annual basis, and after major flood events. Actions shall be taken to correct inadequacies in fencing within 14 days of their discovery.

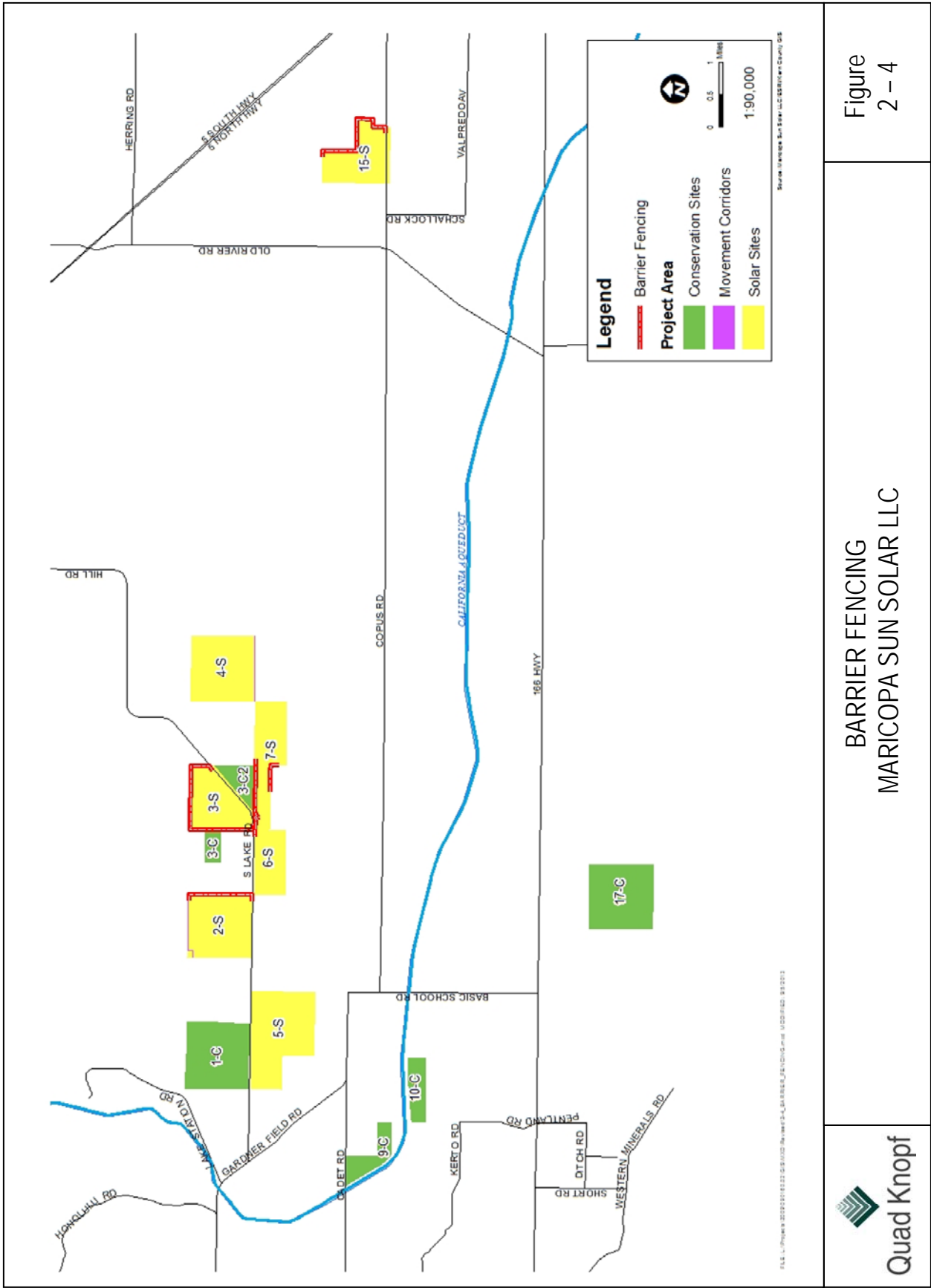
Avoidance and Minimization Measures for Blunt-nosed Leopard Lizard

To ensure that there is no lethal take of a blunt-nosed leopard lizard, the following measures shall be implemented:

1. Barrier fencing shall be provided during all phases of construction between project activity sites and native habitat areas adjacent to those. The fencing shall be buried a minimum of six inches below grade and extend a minimum of 36 inches above grade. This barrier fencing shall be constructed of metal flashing, plastic sheeting, or other materials that cannot be climbed by blunt-nosed leopard lizards, and will be supported on one side (on the construction side of the fence) by stakes, posts of reinforcing bar, or T-posts. The fencing will be affixed to supports in a manner that will prohibit blunt-nosed leopard lizards from climbing the fence. (i.e., bolts or fasteners must be a minimum of 18 inches apart).
2. The fencing shall be inspected by a qualified biological monitor on a weekly basis to ensure fence integrity. Any needed repairs to the fence shall be made on the day of their discovery. Fencing shall be installed and maintained during all phases of construction, but is only required when project activities occur within 200 feet of habitat suitable for supporting the blunt-nosed leopard lizard. Fencing may be removed once construction activities are complete.
3. Annual surveys shall be conducted on all developed Solar Sites during the blunt-nosed leopard lizard adult activity period (April 14 to July 15) to identify areas inhabited by the species.
4. In areas identified as occupied by blunt-nosed leopard lizards, Covered Activities will be restricted to the species active period to ensure that no blunt-nosed leopard lizards aestivating in burrows are crushed. Environmentally Sensitive Areas shall be established and signs shall be posted indicating increased sensitivity of the area. A biological monitor shall be required to accompany all work crews in the vicinity of ESAs. No ground disturbing activities shall occur within identified ESAs. Qualified biological monitors shall inspect ESAs during the adult and juvenile activity period to ensure that all blunt-nosed leopard lizard avoidance measures are being adhered to.
5. All vehicular traffic occurring during construction and during operations and maintenance activities, and occurring on all dirt and graveled roads in areas identified as occupied by blunt-nosed leopard lizards shall be limited to 5 mph or less to reduce

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the potential for mortalities of blunt-nosed leopard lizards from vehicular strikes. Vehicles entering a blunt-nosed leopard lizard occupied area shall require accompaniment by a biological monitor.



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Avoidance and Minimization Measures for the Tipton Kangaroo Rat and Nelson's Antelope Squirrel

To ensure that incidental take of Tipton kangaroo rat and Nelson's antelope squirrel are minimized, the following shall be implemented:

1. All areas of the construction sites where there is a potential for Tipton kangaroo rat burrows and Nelson's antelope squirrel burrows to occur, as determined by a qualified biologist, shall be inspected for the presence of burrows within 14 days of construction (see Pre-construction Surveys, this Section). Given current site conditions (Chapter 3), it is not anticipated that Tipton kangaroo rats, Nelson's antelope squirrel, or other special status species will occur on the Solar Sites during the construction phase of the solar project. If, however, they do become present, ESA buffers will be established and biological monitors will ensure that work activities avoid impacting the species. In the event that project activities must occur within areas that have become occupied by Tipton kangaroo rats or Nelson's antelope squirrels, the Relocation Plan (Appendix F of the Draft HCP -Appendix B of this EIS) will be implemented upon prior approval by the Service. The Relocation Plan will be carried out by a permitted biologist and all results will be proved to the Service in writing within five business days.
2. Given current site conditions, it is not anticipated that the Tipton kangaroo rat, Nelson's antelope squirrel, or other special-status species will occur on the Solar Sites during the pre-construction or construction phases of the Project. If they do become present, ESA buffers shall be established and biological monitors shall ensure that project activities avoid impacting the species. In the event that project activities must occur within areas that have become occupied by Tipton kangaroo rats or Nelson's antelope squirrels, the Relocation Plan (Appendix F of the Draft HCP – Appendix B of this EIS) shall be implemented upon prior approval by the USFWS. The Relocation Plan shall be carried out by a permitted and USFWS-approved biologist and all results shall be provided to the USFWS in writing within five business days. Trapping shall be conducted in a manner that ensures no Tipton kangaroo rats or Nelson's antelope squirrels are predated on or otherwise injured during trapping events.
3. Tipton kangaroo rats and Nelson's antelope squirrels will be temporarily housed when possible to avoid additional stress and disruption to other population through relocation. Temporary housing will be possible in the event that project activities resulting in the need for trapping the species do not occur over a period longer than ten days. If temporarily housed, Tipton kangaroo rats and Nelson's antelope squirrels will be held in ventilated containers of at least 12 inches long by 12 inches wide by 4 inches high. The containers will be partially filled with substrate material and will be kept in the shade or indoors where ambient temperature will not exceed 35° Celsius (C) or be allowed to drop lower than 20°C. Likewise, temperatures will not exceed 35°C during transport.

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Appropriate food items will be provided. The animals shall be relocated in accordance with the relocation plan (Appendix F of the Draft HCP).

4. During operations and maintenance, no small mammal burrows shall be removed without first being inspected by a qualified biologist. If removal is essential, then trapping will occur at each burrow for three consecutive nights. Trapping shall proceed as discussed in the above sections and outlined in Appendix F of the Draft HCP (Appendix B). Once rodents have been removed, all burrows will be excavated by hand under the direct supervision of a qualified biologist and in compliance with Service requirements.

Minimization and Avoidance Measures for Burrowing Owls

To ensure protection of the western burrowing owl, the standard protection measures provided in CDFW's March 7, 2012 *Staff Report on Burrowing Owl Mitigation* shall be implemented (CDFG 2012). Under circumstance where measures recommended in CDFG 2012 cannot reasonably be implemented without significant interference to project activities, the Project's lead biological monitor may seek approval from USFWS to implement the reduced buffers recommended under the October 17, 1995 *Staff Report on Burrowing Owl Mitigation* (CDFG 1995) (See table below). These measures shall be implemented prior to any pre-construction, construction, operation and maintenance, or decommissioning activities. These are summarized as follows:

1. Pre-construction surveys of the construction area and a 500 foot perimeter of the construction area will be conducted no more than 14 days prior to the start of construction. If more than 14 days lapse between the time of the pre-construction survey and the start of ground-disturbing activities, another pre-construction survey must be completed (see Pre-construction Surveys, this Section).

**Recommended Restricted Activity Dates and
Standard Buffer Distances – Burrowing Owls**

Location	Time of Year	Level of Disturbance*		
		Low	Medium	High
Breeding burrow/nest	Feb 1-Aug 31	250 ft	500 ft	500 ft
Non-breeding burrow	Sept 1 – Jan 31	160 ft	250 ft	500 ft

* Levels of disturbance are defined as follows:

Low disturbance – Light vehicle (pick-up trucks or similar) traffic at intervals of 12 or fewer per day.

Medium disturbance – light vehicle traffic and construction work consisting of fewer than 10 workers using hand tools with noise levels greater than 95 dbA for a period of 1 hr. or more, measured 100 feet from work area.

High disturbance – Heavy equipment operations, greater than 10 workers per day, noise levels exceeding 95 dbA for over 1 hr in duration.

2. If burrowing owls are present on the construction sites (or within 250 feet of the construction sites) during the breeding season (April 15 through July 15), and appear to be engaged in nesting behavior, a fenced ESA buffer shall be installed between the nest site or active burrow and any earth-moving activity or other potential disturbance according to the buffer recommendations presented in the table above. This buffer may be removed once it is determined by the lead biologist that the young have fledged and are no longer dependent on the nest or burrow for survival. Typically, the young fledge by August 31. Actual fledging dates may be earlier or later, and shall be determined by the lead biologist. Standard buffer distances shall be maintained as recommended in CDFG 1995. These buffer distances may be reduced on a case-by-case basis and with the guidance of the lead biologist and prior approval by the USFWS. The standard buffer distances shall only be reduced to a size that retains “no disturbance” to burrowing owls.

Management of Conservation Sites

Management of the Conservation Sites may include a range of the following Covered Activities: a) Annual monitoring of Covered Species, b) Annual reporting of findings to agencies, and c) Habitat enhancements to increase sustainability of Covered Species. Habitat management will include: 1) Appropriate fencing where no fencing exists, or repair of existing fencing to prohibit trespassing, unauthorized off road vehicles, and trash dumping; 2) Trash removal and signage installation; 3) Improving vegetation appropriate for Covered Species (for example, enhance saltbush, improve grasslands through managed grazing, utilize natural revegetation, etc.); 4) Limiting road use and abandoning roads no longer needed; and 5) Implementation of adaptive management actions in accordance with the Conservation Site Management Plan.

Annual monitoring of Covered Species and their habitat on the Conservation Sites will include the following types of survey activities: a) Vegetation sampling, b) Small mammal trapping, c) Bird surveys, d) Reptile surveys, e) Track and camera stations, and f) Spotlighting. Annual monitoring for both Covered Species and other special-status species will be conducted.

2.3.4 Reduced Permit Area Alternative

Under the Reduced Permit Area Alternative, the Permit Area would be reduced from 5,784.3 acres to 3,682 acres by removing from the Project: Sites 4-S/4-M (652.5 acres), 6-S (320.9 acres), 7-S/7-M (481.2 acres) and 17-C (647.7 acres). The lands excluded from the Permit Area would likely remain vacant and would continue to be disked on a regular basis for weed control. If water became available, these lands would likely be converted to active agricultural production.

Under this alternative, there would be fewer disturbances of the Covered Species than under the Proposed Action because construction, operations, maintenance and decommissioning activities would occur over a smaller area. However, less land would be permanently conserved and managed, likely resulting in fewer benefits to the Covered Species.

The Reduced Permit Area Alternative has the following key characteristics, compared to the Proposed Action Alternative:

- The Reduced Permit Area Alternative would reduce the total 5,784.3 acres of Covered Lands by 2,102.3 acres, a reduction of 63.6%.
- The Reduced Permit Area Alternative would reduce the 3,798.3 acres devoted to power generation (i.e., solar sites) by 1,428.3 acres, a reduction of 62.4%. This would correlate to a comparable percent reduction in electrical power generation from 700 MW to approximately 437 MW.
- The Reduced Permit Area Alternative would reduce the 1,894.4 acres of land devoted to conservation by 647.7 acres, a reduction of 65.8%

A comparison of development characteristics of the three alternatives are described below:

Comparison of Development Characteristics of Alternatives

	No Action	Proposed HCP	Reduced Permit Area
Land Use (acres)			
Agriculture	5,784.3	N/A	N/A
Solar Sites	N/A	3,798.3	2,370.0
Conservation Sites	N/A	1,894.4	1,246.7
Electrical Power (MW)	N/A	700	437

Chapter 4 Environmental Consequences provides an analysis of the potential environmental effects of the Reduced Permit Area alternative and describes how the potential environmental effects of the Reduced Permit Alternative compare to the Proposed Action for each resource area analyzed in this EIS.

2.3.5 Alternatives Eliminated From Further Consideration

The certified EIR prepared for the Maricopa Sun Solar Complex (SCH#2010031034) analyzed alternatives to the Proposed Action and also identified several alternatives that were initially considered in the analysis but were eliminated from further consideration. Alternatives analyzed in the EIR were the following:

- No Project/ No Build Alternative
- No Utility-scale Solar Development – Distributed Commercial and Industrial Rooftop Only Alternative
- Alternative Oilfield Sites Alternative

Alternatives eliminated from further analysis in the EIR were the following:

General Plan Buildout Alternative - Under this alternative, the project site could be developed to the maximum intensity allowed under the existing Kern County General Plan land use designations, zoning, and other existing applicable restrictions (i.e., Williamson Act).

Under this alternative, no solar PV panels would be developed. This alternative would not result in the creation of renewable power and would fail to meet any of the applicant's objectives for the proposed project.

Wind Energy Alternative - The Wind Energy Project Alternative would involve the use of wind energy as an alternative to development of solar sites. As with solar power, power from the wind is an alternative to energy production from coal, oil, or nuclear sources.

This alternative was eliminated from further consideration because of the following reasons:

- It would result in additional/greater impacts than the proposed project (aesthetics and biological resources).
- It would not substantially reduce the significant environmental impacts associated with GHG emissions.
- This area is not the most conducive to wind production and would not generate as much electricity as solar equipment.
- It would fail to meet the applicant's objectives for the proposed project.

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Industrial Power Plan Alternative - This alternative would involve the development of a natural gas-fired power plant (equivalent to 32.5 MW) in Kern County. Fossil fuel-powered plants are designed on a large scale for continuous operation.

This alternative was eliminated from further consideration because of the following reasons:

- It would result in additional/greater impacts than the proposed project (air quality, GHG emissions, aesthetics, land use and planning, noise, traffic, and public utilities). It would not reduce the significant environmental impacts associated with GHG emissions and aesthetics.
- It would fail to meet the applicant's objectives for the proposed project.

Alternative Sites – Desert Area Alternative - This alternative would involve the development of the proposed project on other sites within Kern County. Although undetermined at this time, the alternative project sites would likely be located in the desert region of the County rather than the valley.

This alternative was eliminated from further consideration because of the following reasons:

- Although other large areas of land could be found, based on the known general conditions in the desert area and the magnitude of the proposed project, alternative sites in the desert area are likely to have the same significant impacts after mitigation as the project, including impacts related to aesthetics and biological resources.
- Alternative sites for the proposed project are not considered to be “potentially feasible.” There are no suitable sites within the control of the project applicant.
- An unknown at this time would be the likelihood of the availability of transmission lines for this project if relocated, including the availability of substations, both of which are needed to transmit the generated electricity.

Inasmuch as these alternatives were addressed in the certified EIR, they are not further addressed in this EIS.